Physics 105A
Additional problems due Sept. 4
(in addition to problems 2-16 and 2-17 from the text)

AP1 A block of mass 10 kg is initially at rest on a horizontal surface, then a constant horizontal force of magnitude F is applied to it. The coefficients of friction between block and surface are $\mu_s = 0.40$ and $\mu_k = 0.30$.

a) Suppose that F is 35 N. What is the acceleration of the block?
b) Suppose that F is 45 N (not 35 as in part a). Again, find the acceleration of the block.

AP2 Again, a block of mass 10 kg is initially at rest on a horizontal surface; this time there is no friction. Starting at time $t = 0$, two constant horizontal forces are applied. Call the plane on which the block moves the x-y plane; then one force is in the x-direction, and has magnitude $F_a = 30$ N; the other force is in the y-direction, and has magnitude $F_b = 40$ N. How far does the block move between times $t = 0$ and $t = 3.0$ sec?